DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-022571
Date Inspected: 08-Apr-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 700
OSM Departure Time: 1900
Location: Shanghai, China

CWI Name:	N/A			**CWI Present:**	☑ Yes	☐ No		
Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A	
Electrode to specification:	☐ Yes	☐ No	☑ N/A	**Weld Procedures Followed:**	☐ Yes	☐ No	☑ N/A	
Qualified Welders:	☐ Yes	☐ No	☑ N/A	**Verified Joint Fit-up:**	☐ Yes	☐ No	☑ N/A	
Approved Drawings:	☐ Yes	☐ No	☑ N/A	**Approved WPS:**	☐ Yes	☐ No	☑ N/A	
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A	

Bridge No: 34-0006
Component: OBG Trial Assembly

Summary of Items Observed:

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) at Trial Assembly Areas

Bike Path at Bay # 19

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom plate for flatness check across the longitudinal butt weld. Flatness check was performed on following mentioned Bike Paths and Bike Path are identified as.

BK004A-013.

The QA Inspector measured the flatness using 600mm long straight edge across the Butt (CJP) weld and using 1500mm long straight edge between the stiffeners which are plug weld to bottom plate.

Observed flatness within the allowable tolerance.

The result of the inspection was informed to ZPMC QC Mr. Guo Xing Hiu, ABF Mr. Peng Wen Jung and Caltrans

Lead Inspector Mr. Mark Miller and Mr. Hiranch Patel.

Bearing Blocks (Post Weld Heat Treatment at Machine Shop)

This QA Inspector visited along with ZPMC QA Mr. Wang Lu (Testino) to the Machine shop to witness the loading of Bearing Blocks inside the heating furnace (furnace # 03095; Model # RT2-210-g) for Post Weld Heat Treatment (PWHT) for the Bearing Blocks 83-2 and 99-8 against the Inspection Notification # 008765.

By the time Caltrans QA Inspector visited to the machine shop Bearing Blocks were already loaded inside the furnace. Observed the heat treatment chart is operational and recording the heat cycle.

ZPMC operator Mr. Xiao Jian was following the Heating rate 67 degree centigrade per hour above 425 degree centigrade, cooling rate 79 degree centigrade per hour from 425 degree centigrade and allowed to cool in still air.

Informed the inspection results to Caltrans Lead Inspector Mr. Mark Miller.

Please reference the pictures attached for more comprehensive details.

Segment 12AW (Floor Beam Angle Brace)

This QA Inspector witnessed final bolt tension verification for Floor Beam Angle Brace connecting the Bottom Panel to T-Ribs and Side Panel (Cross Beam and Counter Weight side) for Segment 12AW. At the following locations. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00641 Dated April 08, 2011.

Segment 12AW at PP 111.5 and at PP 112.5

Floor Beam Angle Brace installed at 2nd and 13th T-Ribs (Cross Beam side) reference taken from work point W6 towards W4.
Floor Beam Angle Brace installed at 3rd, 11th and 16th T-Ribs (Bottom Panel) reference taken from work point W4 towards W3.
Floor Beam Angle Brace installed at 2nd and 13th T-Ribs (Counter Weight side) reference taken from work point W3 towards W1.

The bolt sizes used were M22 x 55 RC Lot # DHGM220044 and the final torque value established was 473 N-m.

The bolt sizes used were M22 x 60 RC Lot # DHGM220046 and the final torque value established was 483 N-m.

The Manual Torque wrench used was Serial No. XO2-777.

Segment 12BW (Floor Beam Angle Brace)

This QA Inspector witnessed final bolt tension verification for Floor Beam Angle Brace connecting the Bottom Panel to T-Ribs and Side Panel (Cross Beam and Counter Weight side) for Segment 12BW. At the following

locations. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00641 Dated April 08, 2011.

Segment 12BW at PP 113.5 and at PP 114.5

Floor Beam Angle Brace installed at 2nd and 13th T-Ribs (Cross Beam side) reference taken from work point W6 towards W4.
Floor Beam Angle Brace installed at 3rd, 11th and 16th T-Ribs (Bottom Panel) reference taken from work point W4 towards W3.
Floor Beam Angle Brace installed at 2nd and 13th T-Ribs (Counter Weight side) reference taken from work point W3 towards W1.

The bolt sizes used were M22 x 55 RC Lot # DHGM220044 and the final torque value established was 473 N-m.

The bolt sizes used were M22 x 60 RC Lot # DHGM220046 and the final torque value established was 483 N-m.

The Manual Torque wrench used was Serial No. XO2-777.

Segment 12CW (Floor Beam Angle Brace)

This QA Inspector witnessed final bolt tension verification for Floor Beam Angle Brace connecting the Bottom Panel to T-Ribs and Side Panel (Cross Beam and Counter Weight side) for Segment 12BW. At the following locations. Inspected the bolt tensioning on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00641 Dated April 08, 2011.

Segment 12CW at PP 115.2

Floor Beam Angle Brace installed at 3rd and 13th T-Ribs (Cross Beam side) reference taken from work point W6 towards W4.
Floor Beam Angle Brace installed at 3rd, 11th and 16th T-Ribs (Bottom Panel) reference taken from work point W4 towards W3.
Floor Beam Angle Brace installed at 3rd and 13th T-Ribs (Counter Weight side) reference taken from work point W3 towards W1.

Segment 12CW at PP 115.5

Floor Beam Angle Brace installed at 2nd and 14th T-Ribs (Cross Beam side) reference taken from work point W6 towards W4.
Floor Beam Angle Brace installed at 3rd, 11th and 16th T-Ribs (Bottom Panel) reference taken from work point W4 towards W3.
Floor Beam Angle Brace installed at 2nd and 14th T-Ribs (Counter Weight side) reference taken from work point W3 towards W1.

Segment 12CW at PP 116

Floor Beam Angle Brace installed at 3rd and 15th T-Ribs (Cross Beam side) reference taken from work point W6 towards W4.
Floor Beam Angle Brace installed at 3rd, 11th and 16th T-Ribs (Bottom Panel) reference taken from work point W4 towards W3.
Floor Beam Angle Brace installed at 3rd and 15th T-Ribs (Counter Weight side) reference taken from work point W3 towards W1.

Segment 12CW at PP 116.5

Floor Beam Angle Brace installed at 4th and 15th T-Ribs (Cross Beam side) reference taken from work point W6 towards W4.
Floor Beam Angle Brace installed at 3rd, 11th and 16th T-Ribs (Bottom Panel) reference taken from work point W4 towards W3.
Floor Beam Angle Brace installed at 4th and 15th T-Ribs (Counter Weight side) reference taken from work point W3 towards W1.

Segment 12CW at PP 117

Floor Beam Angle Brace installed at 15th T-Rib (Cross Beam side) reference taken from work point W6 towards W4.
Floor Beam Angle Brace installed at 3rd, 11th and 16th T-Ribs (Bottom Panel) reference taken from work point W4 towards W3.
Floor Beam Angle Brace installed at 15th T-Rib (Counter Weight side) reference taken from work point W3 towards W1.

The bolt sizes used were M22 x 55 RC Lot # DHGM220044 and the final torque value established was 473 N-m.

The bolt sizes used were M22 x 60 RC Lot # DHGM220046 and the final torque value established was 483 N-m.

The Manual Torque wrench used was Serial No. XO2-777.

Please reference the pictures attached for more comprehensive details.

Segment 12AE (Cable Tray Support Structures)

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for cable tray support structures installed at bottom panel between the Panel Points (PP) 109 to PP 110; PP 110 to PP 111 and PP 111 to PP111.5 for Segment 12AE at North and South side. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00642 dated April 08, 2011.

Bolt sizes used were M20 x 50 RC Set# DHGM200037 and final torque required was 367 N-m.

Bolt sizes used were M20 x 45 RC Set# DHGM200036 and final torque required was 287 N-m.

The Manual Torque wrench used was Serial No. XO2-114.

Please reference the pictures attached for more comprehensive details.

Segment 12BE (Cable Tray Support Structures)

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for cable tray support structures installed at bottom panel between the Panel Points (PP) 112 to PP 112.5; PP 113 to PP 114 and PP 114 to PP114.5 for Segment 12BE at North and South side. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00642 dated April 08, 2011.

Bolt sizes used were M20 x 50 RC Set# DHGM200037 and final torque required was 367 N-m.

Bolt sizes used were M20 x 45 RC Set# DHGM200036 and final torque required was 287 N-m.

The Manual Torque wrench used was Serial No. XO2-114.

Segment 12CE (Cable Tray Support Structures)

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for cable tray support structures installed at bottom panel between the Panel Points (PP) 115.2 to PP 115.75 and PP 116.5 to PP 116.75 for Segment 12CE at North and South side. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00642 dated April 08, 2011.

Bolt sizes used were M20 x 50 RC Set# DHGM200037 and final torque required was 367 N-m.

Bolt sizes used were M20 x 45 RC Set# DHGM200036 and final torque required was 287 N-m.

The Manual Torque wrench used was Serial No. XO2-114.

Segment 12AW (Suspender Bracket Installation)

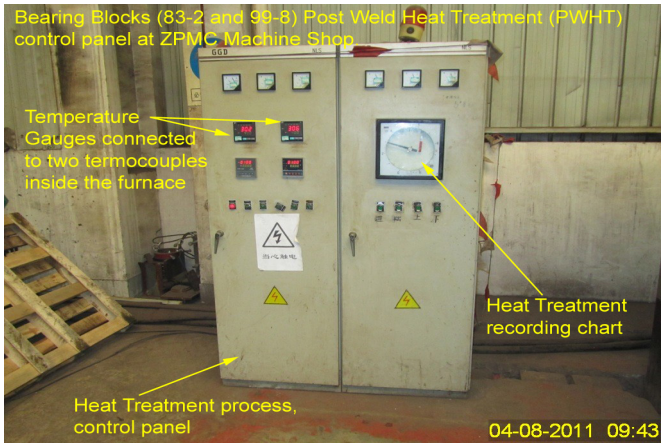
This Quality Assurance (QA) observed ZPMC personnel installing the Suspender Bracket SB112W, at Panel Point (PP) 112 at Segment 12AW, Counter Weight side.

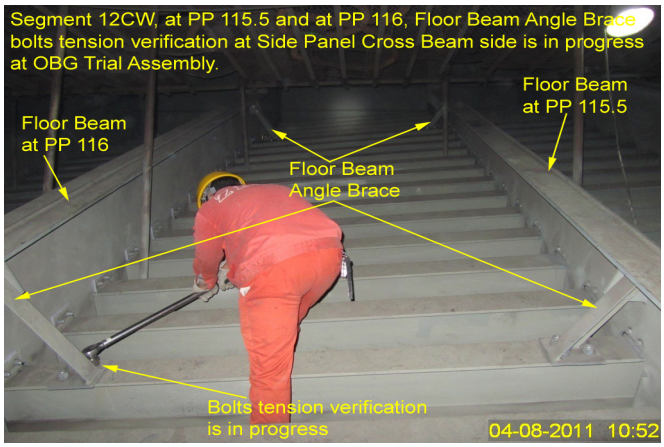
Please reference the pictures attached for more comprehensive details.

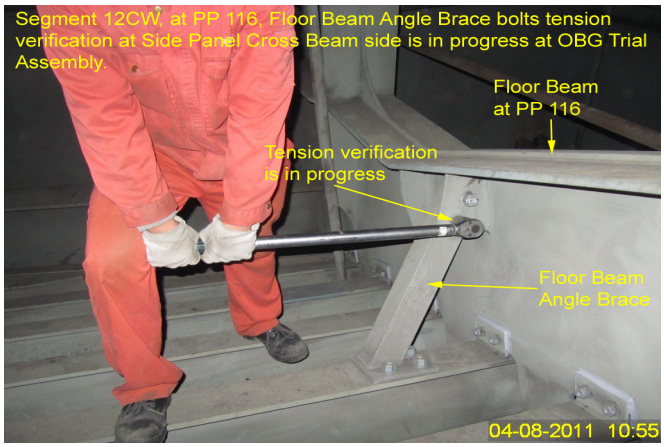
Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

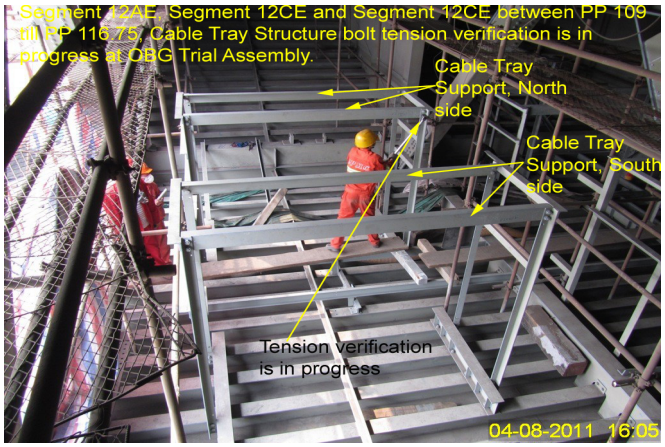
WELDING INSPECTION REPORT

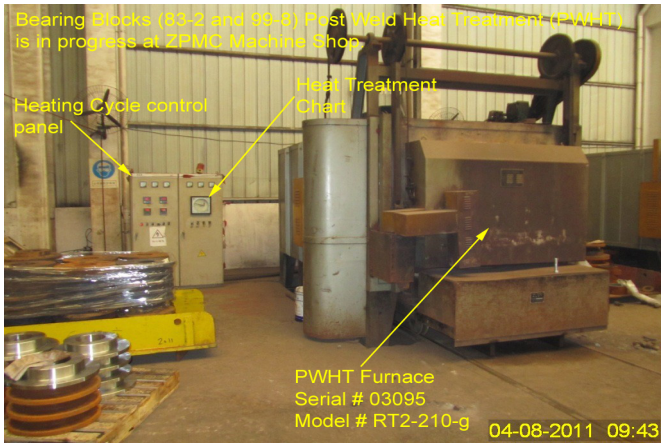
(Continued Page 6 of 7)











Summary of Conversations:

No relevant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang 15000422372, who represents the Office of Structural Materials for your project.

Inspected By:	Math,Manjunath	Quality Assurance Inspector
Reviewed By:	Miller,Mark	QA Reviewer